## **Sequence Listing**

SEQ ID NO: 1: SAP amino acid sequence AGKTFPDVPADHWGID SINYLVEKGAVKGND KGMFEPGKELTRAEA ATMMAQILNLPIDKD AKPSFADSQGQWYTP FIAAVEKAGVIKGTG NGFEPNGKIDRVSMA SLLVEAYKLDTKVNG TPATKFKDLETLNWG KEKANILVELGISVG TGDQWEPKKTVTKAE AAQFIAKTDKQFGTE  $A\ A\ K\ V\ E\ S\ A\ K\ A\ V\ T\ T\ Q\ K\ V$ EVKFSKAVEKLTKED IKVTNKANNDKVLVK EVTLSEDKRSATVEL YSNLAAKQTYTVDVN KVGKTEVAVGSLEAK  $T\ I\ E\ M\ A\ D\ Q\ T\ V\ V\ A\ D\ E\ P\ T$ ALQFTVKDENGTEVV SPEGIEFVTPAAEKI NAKGEITLAKGTSTT VKAVYKKDGKVVAES KEVKVSAEGAAVASI SNWTVAEQNKADFTS KDFKQNNKVYEGDNA YVQVELKDQFNAVTT

GKVEYESLNTEVAVV D K A T G K V T V L S A G K A PVKVTVKDSKGKALV SHTVEIEAFAQKAMKDIKLEKTNVALSTKD  $V\ T\ D\ L\ K\ V\ K\ A\ P\ V\ L\ D\ Q\ Y\ G$ KEFTAPVTVKVLDKD G K E L K E Q K L E A K Y V N RELVLNAAGQEAGNY TVVLTAKSGEKEAKA TLALELKAPGAFSKF  $E\ V\ R\ G\ L\ D\ T\ E\ L\ D\ K\ Y\ V\ T\ E$ ENQKNAMTVSVLPVD ANGLVLKGAEAAELK VTTTNKEGKEVDATD AQVTVQNNSVITVGQ GAKAGETYKVTVVLD GKLITTHSFKVVDTA  $P\ T\ A\ K\ G\ L\ A\ V\ E\ F\ T\ S\ T\ S\ L$ KEVAPNADLKAALLN ILSVDGVPATTAKAT ASNVEFVSADTNVVA ENGTVGAKGATSIYV KNLTVVKDGKEQKVE F D K A V Q V A V S I K E A K PATK

## SEQ ID NO: 2 SAP nucleotide sequence

AAAACATTCCCAGACGTTCCTGCTGATCACTG GGGAATTGATTCCATTAACTACTTAGTAGAAAAAGGCGCAGTTAAAGGTA ACGACAAAGGAATGTTCGAGCCTGGAAAAGAATTAACTCGTGCAGAAGCA GCTACAATGATGGCTCAAATCTTAAACTTACCAATCGATAAAGATGCTAA ACCATCTTTCGCTGACTCTCAAGGCCAATGGTACACTCCATTCATCGCAG CTGTAGAAAAAGCTGGCGTTATTAAAGGTACAGGAAACGGCTTTGAGCCA AACGGAAAAATCGACCGCGTTTCTATGGCATCTCTTCTTGTAGAAGCTTA CAAATTAGATACTAAAGTAAACGGTACTCCAGCAACTAAATTCAAAGATT TAGAAACATTAAACTGGGGTAAAGAAAAAGCTAACATCTTAGTTGAATTA GGAATCTCTGTTGGTACTGGTGATCAATGGGAGCCTAAGAAAACTGTAAC TAAAGCAGAAGCTGCTCAATTCATTGCTAAGACTGACAAGCAGTTCGGTA CAGAAGCAGCAAAAGTTGAATCTGCAAAAGCTGTTACAACTCAAAAAGTA GAAGTTAAATTCAGCAAAGCTGTTGAAAAATTAACTAAAGAAGATATCAA AGTAACTAACAAAGCTAACAACGATAAAGTACTAGTTAAAGAGGTAACTT TATCAGAAGATAAAAGATCTGCTACAGTTGAATTATATAGTAACTTAGCA GCTAAACAACTTACACTGTAGATGTAAACAAAGTTGGTAAAACAGAAGT AGCTGTAGGTTCTTTAGAAGCAAAAACAATCGAAATGGCTGACCAAACAG TTGTAGCTGATGAGCCAACAGCATTACAATTCACAGTTAAAGATGAAAAC GGTACTGAAGTTGTTTCACCAGAGGGTATTGAATTTGTAACGCCAGCTGC AGAAAAATTAATGCAAAAGGTGAAATCACTTTAGCAAAAGGTACTTCAA CTACTGTAAAAGCTGTTTATAAAAaAGACGGTAAAGTAGTAGCTGAAAGT AAAGAAGTAAAAGTTTCTGCTGAAGGTGCTGCAGTAGCTTCAATCTCTAA CTGGACAGTTGCAGAACAAAATAAAGCTGACTTTACTTCTAAAGATTTCA AACAAAACAATAAAGTTTACGAAGGCGACAACGCTTACGTTCAAGTAGAA TTGAAAGATCAATTTAACGCAGTAACAACTGGAAAAGTTGAATATGAGTC GTTAAACACAGAAGTTGCTGTAGTAGATAAAGCTACTGGTAAAGTAACTG TATTATCTGCAGGAAAAGCACCAGTAAAAGTAACTGTAAAAGATTCAAAA GGTAAAGCACTTGTTTCACACACAGTTGAAATTGAAGCTTTCGCTCAAAA AGCAATGAAAGACATTAAATTAGAAAAAACTAACGTAGCGCTTTCTACAA AAGATGTAACAGATTTAAAAGTAAAAGCTCCAGTACTAGATCAATACGGT AAAGAGTTTACAGCTCCTGTAACAGTGAAAGTACTTGATAAAGATGGTAA AGAATTAAAAGAACAAAAATTAGAAGCTAAATATGTGAACAGAGAATTAG TTCTGAATGCAGCAGGTCAAGAAGCTGGTAATTATACAGTTGTATTAACT GCAAAATCTGGTGAAAAAGAAGCAAAAGCTACATTAGCTCTAGAATTAAA AGCTCCAGGTGCATTCTCTAAATTTGAAGTTCGTGGTTTAGACACAGAAT TAGATAAATATGTTACTGAGGAAAACCAAAAGAATGCAATGACTGTTTCA GTTCTTCCTGTAGATGCAAATGGATTAGTATTAAAAGGTGCAGAAGCAGC TGAACTAAAAGTAACAACAACAAACAAGAAGGTAAAGAAGTAGACGCAA CTGATGCACAAGTTACTGTACAAAATAACAGTGTAATTACTGTTGGTCAA GGTGCAAAAGCTGGTGAGACTTATAAAGTAACAGTTGTACTAGATGGTAA ATTAATCACAACTCATTCATTCAAAGTTGTTGATACAGCACCAACTGCTA AAGGATTAGCAGTAGAATTTACAAGCACATCTCTTAAAGAAGTAGCTCCA ACCTGCGACTACAGCAAAAGCAACAGCTTCTAATGTAGAATTTGTTTCTG CTGACACAAATGTTGTAGCTGAAAATGGTACAGTTGGTGCAAAAAGGTGCA ACATCTATCTATGTGAAAAACCTGACAGTTGTAAAAGATGGAAAAGAGCA AAAAGTAGAATTTGATAAAGCTGTACAAGTTGCAGTTTCTATTAAAGAAG

## 61 CAAAACCTGCAACAAAACATCACCATCACCATCACTAA

SEQ ID NO: 2 SAP nucleotide sequence

AAAACATTCCCAGACGTTCCTGCTGATCACTG GGGAATTGATTCCATTAACTACTTAGTAGAAAAAGGCGCAGTTAAAGGTA ACGACAAAGGAATGTTCGAGCCTGGAAAAGAATTAACTCGTGCAGAAGCA GCTACAATGATGGCTCAAATCTTAAACTTACCAATCGATAAAGATGCTAA ACCATCTTTCGCTGACTCTCAAGGCCAATGGTACACTCCATTCATCGCAG CTGTAGAAAAAGCTGGCGTTATTAAAGGTACAGGAAACGGCTTTGAGCCA AACGGAAAAATCGACCGCGTTTCTATGGCATCTCTTCTTGTAGAAGCTTA CAAATTAGATACTAAAGTAAACGGTACTCCAGCAACTAAATTCAAAGATT TAGAAACATTAAACTGGGGTAAAGAAAAAGCTAACATCTTAGTTGAATTA GGAATCTCTGTTGGTACTGGTGATCAATGGGAGCCTAAGAAAACTGTAAC TAAAGCAGAAGCTGCTCAATTCATTGCTAAGACTGACAAGCAGTTCGGTA CAGAAGCAGCAAAAGTTGAATCTGCAAAAAGCTGTTACAACTCAAAAAGTA GAAGTTAAATTCAGCAAAGCTGTTGAAAAATTAACTAAAGAAGATATCAA AGTAACTAACAAGCTAACAACGATAAAGTACTAGTTAAAGAGGTAACTT TATCAGAAGATAAAAGATCTGCTACAGTTGAATTATATAGTAACTTAGCA GCTAAACAAACTTACACTGTAGATGTAAACAAAGTTGGTAAAACAGAAGT AGCTGTAGGTTCTTTAGAAGCAAAAACAATCGAAATGGCTGACCAAACAG TTGTAGCTGATGAGCCAACAGCATTACAATTCACAGTTAAAGATGAAAAC GGTACTGAAGTTGTTTCACCAGAGGGTATTGAATTTGTAACGCCAGCTGC AGAAAAAATTAATGCAAAAGGTGAAATCACTTTAGCAAAAGGTACTTCAA CTACTGTAAAAGCTGTTTATAAAAAAGACGGTAAAGTAGTAGCTGAAAGT AAAGAAGTAAAAGTTTCTGCTGAAGGTGCTGCAGTAGCTTCAATCTCTAA CTGGACAGTTGCAGAACAAAATAAAGCTGACTTTACTTCTAAAGATTTCA AACAAAACAATAAAGTTTACGAAGGCGACAACGCTTACGTTCAAGTAGAA TTGAAAGATCAATTTAACGCAGTAACAACTGGAAAAGTTGAATATGAGTC GTTAAACACAGAAGTTGCTGTAGTAGATAAAGCTACTGGTAAAGTAACTG TATTATCTGCAGGAAAAGCACCAGTAAAAGTAACTGTAAAAGATTCAAAA GGTAAAGCACTTGTTTCACACACAGTTGAAATTGAAGCTTTCGCTCAAAA AGCAATGAAAGACATTAAATTAGAAAAAACTAACGTAGCGCTTTCTACAA AAGATGTAACAGATTTAAAAGTAAAAGCTCCAGTACTAGATCAATACGGT AAAGAGTTTACAGCTCCTGTAACAGTGAAAGTACTTGATAAAGATGGTAA AGAATTAAAAGAACAAAAATTAGAAGCTAAATATGTGAACAGAGAATTAG TTCTGAATGCAGCAGGTCAAGAAGCTGGTAATTATACAGTTGTATTAACT GCAAAATCTGGTGAAAAAGAAGCAAAAGCTACATTAGCTCTAGAATTAAA AGCTCCAGGTGCATTCTCTAAATTTGAAGTTCGTGGTTTAGACACAGAAT TAGATAAATATGTTACTGAGGAAAACCAAAAGAATGCAATGACTGTTTCA GTTCTTCCTGTAGATGCAAATGGATTAGTATTAAAAGGTGCAGAAGCAGC TGAACTAAAAGTAACAACAACAAACAAAGAAGGTAAAGAAGTAGACGCAA CTGATGCACAAGTTACTGTACAAAATAACAGTGTAATTACTGTTGGTCAA GGTGCAAAAGCTGGTGAGACTTATAAAGTAACAGTTGTACTAGATGGTAA ATTAATCACAACTCATTCATTCAAAGTTGTTGATACAGCACCAACTGCTA AAGGATTAGCAGTAGAATTTACAAGCACATCTCTTAAAGAAGTAGCTCCA ACCTGCGACTACAGCAAAAGCAACAGCTTCTAATGTAGAATTTGTTTCTG CTGACACAAATGTTGTAGCTGAAAATGGTACAGTTGGTGCAAAAGGTGCA ACATCTATCTATGTGAAAAACCTGACAGTTGTAAAAGATGGAAAAGAGCA AAAAGTAGAATTTGATAAAGCTGTACAAGTTGCAGTTTCTATTAAAGAAG